

THE ENERGY SAVING COMPANY

[sidelsystems.com](http://sidelsystems.com)

## Sidel SRU Series

# Flue Gas Condensing Economizers for Natural Gas Boilers

 **IDEL**  
**SYSTEMS U.S.A. INC.**





**SRU SERIES ECONOMIZERS**

**"Do You Want To Save Money, Increase Profits, Reduce Your 'Carbon Footprint,' And Help Conserve The World's #1 Natural Resource?"**

At Sidel Systems, we know that governments, corporations and organizations of every size want to identify efficient ways to cut costs and improve the bottom line. As a company focused on harnessing energy, we also understand the importance of reducing CO<sub>2</sub> emissions and conserving water, as well as the many economic, public relations, and environmental benefits from minimizing our carbon footprint. We created the SRU Series Flue Gas Condenser to meet all of these challenges, while supplying the best possible return on investment for our clients. You can count on ultimate value, with the most efficient, trouble-free Flue Gas Condenser system available anywhere – guaranteed – at an honest, fair price.

Our systems retrofit to your existing boiler and furnace equipment, which saves you money while boosting energy efficiency.



**Condensing flue gas heat recovery systems** have been used around the world for more than 30 years. In most applications, savings of 8% to 18% are realized. This is significant considering the high cost of natural gas.

The Sidel SRU series waste heat recovery units are built in North America in accordance with ASME (American Society of Mechanical Engineers) codes. Our systems can be installed with any natural gas or LPG fired power burner boiler or heating unit. We retrofit to work with your equipment, saving money and time.

**SIDEL SYSTEMS, INC.****What We Do**

Sidel Systems proudly manufactures the full line of SRU Series Flue Gas Waste Heat Recovery Units. We help companies and government agencies save money on energy bills while reducing CO<sub>2</sub> emissions and creating usable water as a byproduct of operating our equipment. We retrofit to your systems to reduce costs.

**Save Money**

By significantly increasing the efficiency of natural gas appliances, we help our clients lower their electrical energy consumption and water costs. Money that was literally "going up the chimney" goes back on your bottom line as new-found profit.

**Reduce CO<sub>2</sub> Emissions**

By reducing the quantity of flue exhaust released from your chimney, we automatically lower CO<sub>2</sub> emissions. This not only helps the environment, but improves the public perception of your company or organization. As the "green revolution" gains momentum throughout the world, our products help you promote your efforts as an authentic, environmentally-friendly organization.

**Create New Water**

By converting the hot waste exhaust gases into usable water, which is a natural byproduct of our high-efficiency technology, we help further lower your utility bills. Every gallon of water created by a Sidel unit is a gallon you didn't have to purchase. This benefits water conservation and your bottom line. There are many ways that this water can be used, and we're delighted to discuss how you can make the most of this new resource.

**"We Are The Energy Efficiency Experts"**

Our clients have been saving money and helping the environment long before "going green" was trendy. Back in 1978, we specialized in the design and installation of hot water heating systems for the commercial greenhouse industry. Greenhouse structures have a very high heat loss factor, so it's extremely important to achieve maximum fuel efficiency. Building on our success within that industry we have become true experts in energy efficiency. Today, Sidel Systems products are among the most energy efficient, cost effective flue gas waste heat recovery units in the world. Guaranteed!

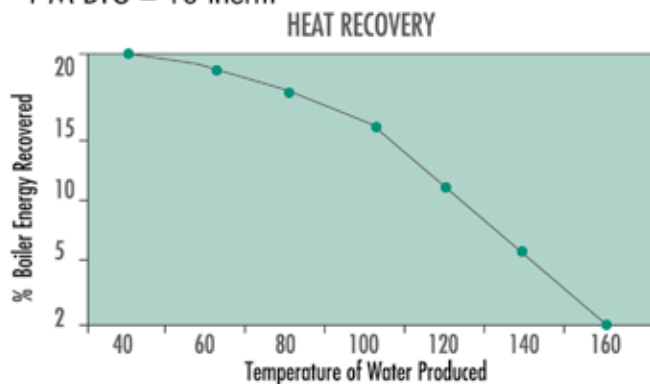


## WHY SEND YOUR \$\$\$ MONEY UP THE CHIMNEY?

### POTENTIAL SAVINGS TO YOU

For a typical 250 HP natural gas fired boiler operating with an exhaust gas temperature of 410°F and 15% excess combustion air, the efficiency is approximately 80%. The fuel input is approximately 10.5 million BTU/hr, and 20% of the fuel's total energy is going up the chimney. By incorporating a SRU waste heat recovery system to produce 100°F water, about **15% of the fuel's original energy can be recovered**. If the boiler operates for an equivalent of 6,000 full load hours per year, and natural gas costs \$.70 per therm, the annual savings realized from a SRU waste heat recovery system will be:  $10.5\text{M BTU/hr} \times 15\% \times 6,000 \text{ hrs/yr} \times \$7.00/\text{M BTU}^* = \$66,150$

\*1 M BTU = 10 therm



### APPLICATIONS

|                              |                |
|------------------------------|----------------|
| Food Processing              | Prisons        |
| Hospitals and Health Centers | Breweries      |
| Schools and Universities     | Hotels         |
| Government Buildings         | Wineries       |
| Commercial Laundries         | Swimming pools |
| Pulp & Paper                 | Textile Plants |

#### *The question to ask is: Why is this boiler here?*

Is steam from this boiler used to heat domestic or process water? Is it a hot water boiler used for space heating? Let's use the heat from the exhaust gasses to preheat this water.

### SRU CAPACITY

Standard SRU sizes are available for heating appliances with inputs as small as 2 million BTU/hr. to capacities of 350,000 lbs/hr. using multiple SRU recovery units. All units are constructed in accordance with the ASME codes.

## WATER FOR THE LAWN AND FLOWERBEDS

### CONDENSATE

Did you know that if you own a natural gas boiler or heating appliance, usable water is escaping out of your chimney? In fact, approximately 8% of flue gas is water. It's literally like taking a faucet and leaving it on all day, but on a much larger scale. Not only are you wasting a precious natural resource every hour of every day, you're also losing money.

Sidel Systems can help you conserve water while saving money at the same time. Our SRU Heat Recovery Condensers capture most of the energy potential exhausted in your flue gases and turn it into usable heat. During this heat recovery process, as the waste HOT exhaust gases are being cooled to below the dewpoint temperature, water is being created, and is collected at the base section. Every gallon collected is a gallon you do not have to purchase. This not only conserves the public water supply, it also saves you money.

*So while our SRU units are increasing your energy efficiency and saving you money, they're also conserving water and making your organization "greener" - your customers will love you for that.*

There are several beneficial uses for this reclaimed water. It can be used as boiler feedwater, or be added to the plant washdown water, or to the evaporative coolers. It can be treated and applied to almost any application, and if there is no other place to utilize this water, how about collecting it into a large plastic container underground and using this water to irrigate lawns and flower beds?

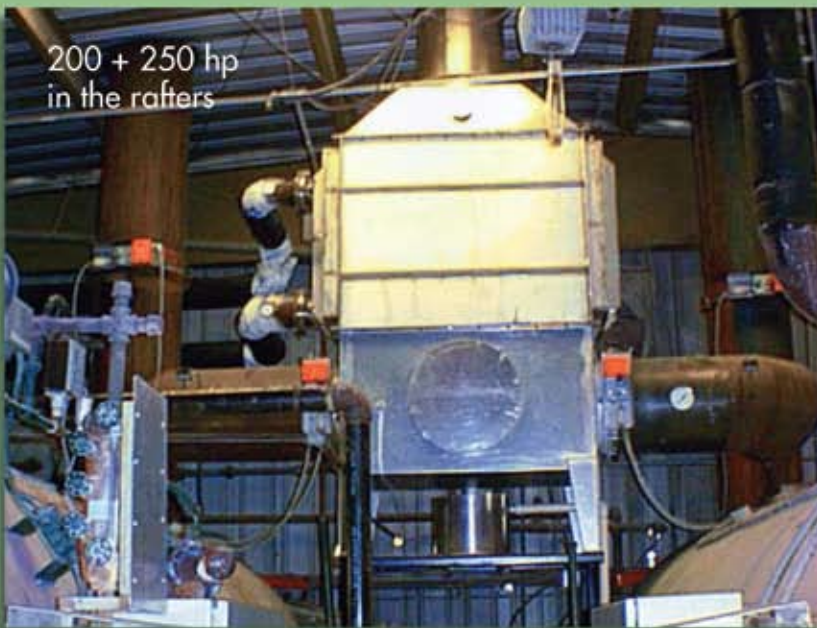
**Who would have thought you could actually water your lawns & flowers with combusted natural gas?**

*Investing in a Sidel SRU Heat Recovery System is a great way to save money and help the environment, but- it's also great for increasing customer loyalty and expanding your customer base.*

When you conserve water (and with Sidel Systems, you conserve energy and reduce CO2 emissions as well), you become a hero to all the people who care about protecting our environment for future generations, including your customers! They really will appreciate your efforts to make the world a better place, and they will reward you for it – with continued loyalty and by telling their friends and family to do business with you.

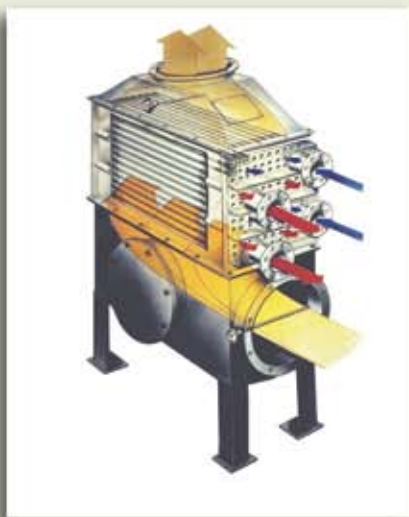


**SIDEL SRU  
STANDARD CONCEPT**





**SIDEL SRU  
COMBI CONCEPT**



600 hp C.B. on the floor



# Sidel Therm and CO<sub>2</sub> Counter



In order to quantify the amount of heat recovered, Sidel Systems, in conjunction with Helman Automation, has created the Sidel Therm and CO<sub>2</sub> Counter. This is an industrial PLC capable of continuously storing data which shows how much energy is saved by the SRU Flue Gas Condenser. The Therm and CO<sub>2</sub> Counter control unit has two major components: the HMI (human machine interface), and the PLC (programmable logic units).

The HMI displays all the important information, is the gateway to change parameters, and can communicate collected data to other terminals via the internet.

One of the greatest advantages of the system is its capability to be adapted to the monitoring needs of the customer. The system can be programmed to perform all the automation control, data acquisition, and data storage.

The Sidel Therm and CO<sub>2</sub> Counter works in a similar way to any utility meter, with the exception of an additional audible buzzer which sounds in response to any hazard that may occur.

The display screen shows the amount of energy recovered as well as other vital information such as the temperature at several critical points, water flow,

chimney valve position, and monitor any other information required to protect the SRU from damage. Any data that registers out of normal range will set off an alarm.

The HMI used in the Sidel Therm and CO<sub>2</sub> Counter has all the latest technology, such as: a high resolution touchscreen, Ethernet, USB and serial port connections. This allows the data collected to be displayed on any computer in the company.

The HMI can be customized to display in either Metric units or British units and also can be programmed for Multi languages.

This feature is very useful to see graphically how the changes of each parameter affect the heat recovery process.

## How the Sidel Therm and CO<sub>2</sub> Counter works

From 4 sensors that are inserted into the pipes connected to the Sidel SRU Flue Gas Heat Recovery Unit, the Therm and CO<sub>2</sub> Counter takes the temperature of:

- Water flowing into the SRU unit.
- Water flowing out of the SRU unit.
- Flue gas entering the SRU unit.
- Flue gas exiting the SRU unit.

From the water flow sensor inserted into the water intake pipe, the PLC receives the rate of water flowing through the SRU in gallons per minute (GPM). This data is received by the PLC in 5 second intervals and is displayed on the screen.

The PLC calculates the Delta T in BTU's, and the flow rate in GPM and displays the resulting calculation as BTU's saved every 5 seconds. From these figures it is possible to see, in real time, exactly how the SRU is performing. This information is also saved as history in the PLC memory and can be displayed on the History Screen.

## DATA TRENDING



Alarm  
Screen

History  
Button

Data Trending  
Button

System  
Settings

By using the touch screen the operator can open and close the chimney valve, control the alarm function set the system, and navigate between the displays. The displayed calculations also can be sent over the internet or intranet to be displayed on any computer within the company.

This gives the Sidel SRU a unique advantage in providing real time cost savings analysis that can be used by managers to prove that their company is acting responsibly by reducing greenhouse gas emissions and using their energy as efficiently as possible.

## HISTORY

| Time  | Date     | Win (F) | VW out (F) | Air in (F) | Air out (F) | GPM | BTU's |
|-------|----------|---------|------------|------------|-------------|-----|-------|
| 12:58 | 15/12/08 | 117.7   | 133.1      | 291.2      | 169.2       | 162 | 1018  |
| 10:58 | 15/12/08 | 157.5   | 181.9      | 275.5      | 161.5       | 120 | 1084  |
| 09:58 | 15/12/08 | 156.2   | 179.5      | 271.5      | 161.0       | 111 | 969   |
| 08:58 | 15/12/08 | 155.2   | 158.7      | 190.8      | 94.8        | 81  | 273   |
| 07:58 | 15/12/08 | 112.0   | 97.1       | 83.0       | 58.1        | 19  | 0     |
| 06:58 | 15/12/08 | 60.9    | 58.0       | 51.0       | 53.8        | 0   | 0     |
| 05:58 | 15/12/08 | 60.2    | 57.5       | 50.4       | 52.3        | 0   | 0     |
| 04:58 | 15/12/08 | 60.2    | 57.7       | 50.3       | 51.1        | 0   | 0     |
| 03:58 | 15/12/08 | 60.3    | 58.0       | 50.6       | 50.7        | 0   | 0     |
| 02:58 | 15/12/08 | 61.6    | 58.8       | 51.7       | 50.4        | 0   | 0     |
| 01:58 | 15/12/08 | 63.8    | 60.2       | 53.6       | 52.0        | 0   | 0     |
| 00:58 | 15/12/08 | 60.3    | 59.8       | 52.9       | 52.5        | 1   | 1     |

## OUR CLIENTS

We are honored to have helped the following companies and organizations, in the last few years, meet their energy efficiency goals, and we are proud to call them our clients and friends...

District of Columbia Regional Housing Authority,  
Washington, D.C.

Best Glove, Fayette, Alabama

Brewer Garrett Co., Cleveland, Ohio

C. Rakers and Sons, Linchfield, Missouri

Westbrook Greenhouse Systems, Beamsville, Ontario

Mission Linen Supply, Chico, California

Mission Linen Supply, Salinas, California

Mission Linen Supply, Oceanside, California

Mission Linen Supply, Santa Maria, California

Johannes Flowers, Carpenteria, California

Darigold, Inc., Jerome, Idaho

Darigold, Inc., Boise, Idaho

Steam Engineering, Vancouver, Washington

Dryden Regional Health Center, Dryden, Ontario

CSA Construction Services, Washington, D.C.

Harris Ranch Meats, Selma, California

E&J Gallo Winery, Fresno, California

Holman Boiler, Houston, Texas

AKZO Nobel, Houston, Texas

Kraft Foods, Ingleside, Ontario, Canada

Pacific foods, Portland, Oregon

Marspec Technical Products, Spanish Fork, Alabama

GVA Northwest, LLC, Portland, Oregon

Eurosa Gardens, Brentwood Bay, British Columbia,  
Canada

We would love to explore with you how you can  
become our next satisfied client.

**Our Iron-Clad Guarantee: "You Will Be 100% Satisfied With The Money Saved, CO<sub>2</sub> Emissions Reduced, Water Conserved, And Exceptional Service, Or We'll Buy Your Unit Back From You - Period."**  
- Sid Abma



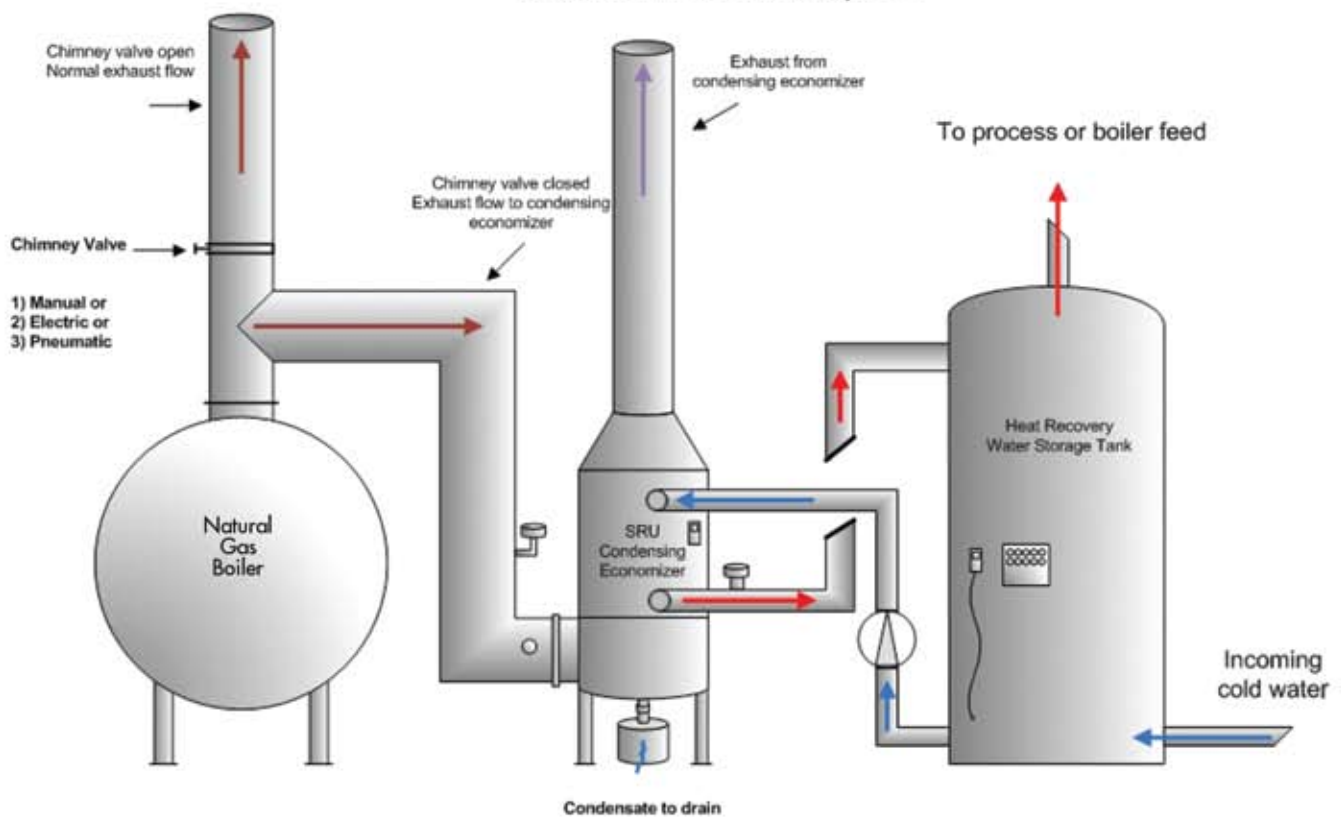
*Flue gas recovery systems are being used around the world.*

## BENEFITS

- Increased system efficiency (typically to 90-95%)
- Fuel savings (typically 10-15%)
- Short payback
- Easy installation, low maintenance
- Reduced CO<sub>2</sub> and other noxious gas emissions
- Reduced stack noise emission
- Operates over a broad range of equipment conditions
- Computer-aided design (to ensure optimum sizing)
- Computer-aided investment analysis
- 7- year limited guarantee

sidelsystems.com

### Sidel Systems SRU Flue Gas Condensing Economizer Potential Installation Option



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